

LOGIK

LCX27WN2

Service information



Nexgen Mediatech Inc.

LCD TV Maintenance Manual Hand book

Approved by:

Title:

Level 1 Service Manual

Prepared by:

Alex Chen

Doc. No.

Preparation Date

Model

Version

Page

2003/11/13

27"

V1.0

1 OF 31

Version

Date of new version

Contents (Revision)

V1.0

2003.11.13

New release (new product)

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27" LCD TV Service Manual

1 . Electric Specifications

Display panel	Screen Size	597.12(H) X 335.88(V)mm(diagonal 26.97 inches)
	Aspect Ratio	16:9 WIDE
	Pixel Pitch	0.1555(H) X R.G.B. X 0.4665(V)mm
	Number of Pixels	1280(H) X R.G.B. X 720(V)
	Luminance	500cd/m ² (Typical)
	Contrast	500:1(Typical)
	Response Time	16ms
	Viewing Angle	Typical 170Degree(Horizontal/Vertical)
Signals Input/out	*Video in	RCA JackX 1
	*Scart	RGB + Audio/Composite + Audio(Europe region)
	*S-Video in	Y/C X 1
	*Component in	YPbPr(USA X2,Europe X2,JapanX1)
	*Tuner in	NTSC/PAL/SECAM(OPTIONAL)
	*EIAJ-D4	Mini-D 14 pin(Japanregion)
	Audio in	Head phone X1(PC) * RCA Jack(R+L)X4
	RGB in	D-sub 15 pin 3 row type
	Audio out	RCA Jack(R+L)X 1 / Subwoofer RCA Jack X 1
	PIP	1 Mode
	Display Mode	4:3 mode, Fullmode, Panoraic
Compatibility	Color system	NTSC/PAL/SECAM
	Video system	NTSC/PAL/SECAM
	PC/Mac	VGA/SVGA/XGA/SXGA
	SDTV/HDTV scanning format	1080i, 720p, 480p, 480i (NTSC) 1080i, 576p, 576i (PAL)
Audio Output	Built-in speaker	8w + 8w (Stereo)
	Subwoofer	RCA JackX 1
Regulation	Safety / EMC	UL/CUL, VCCI, CB, CE, FCC Class B
	Accessories	RGB Cable / Power Cable / Remote controller / Batteries / User'sManual / WarrantyCard * AV Cable
Other	Package Size	96 X31 X61 cm
	Net Weight /Gross Weight	18 kg /23.8kg
	Power Source	Input : 100-240V, 1.8A, 50-60Hz
	Operative temperature	0~40 °C

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VGA Supported Timing

Item	Standards	Resolution	Dot Clock (MHz)	Vertical Scanning Frequency (Hz)	Horizontal Scanning Frequency (KHz)	Sync Polarity or composite sync (H/V)	Operating Mode	Note
1	NEC PC98	640x350	25.175	70.00	31.50	-/-	VGA	
2	MAC 13" mode	640x480	25.175	59.940	31.469	-/-	VGA	
3	MAC 16" mode	640x480	31.50	72.809	37.861	-/-	VGA	
4	MAC 17" mode	640x480	31.50	75.00	37.50	-/-	VGA	
5	VGA	640x480	36.00	85.008	43.269	-/-	VGA	
6	VGA	800x600	36.00	56.250	35.156	+/+	VGA	
7	VGA	800x600	40.00	60.317	37.879	+/+	VGA	
8	VESA	800x600	50.00	72.188	48.077	+/+	VGA	
9	VESA	800x600	49.50	75.00	46.875	+/+	VGA	
10	VESA	800x600	56.25	85.061	53.674	+/+	VGA	
11	SVGA	1024x768	65.00	60.004	48.364	-/-	VGA	
12	VESA	1024x768	75.00	70.069	56.476	-/-	VGA	
13	VESA	1024x768	78.75	75.029	60.023	+/+	VGA	
14	VGA	1280x1024	108.00	60.02	63.981	+/+	VGA	
15	XGA	720x400	28.32	70.08	31.46	-/+	VGA	
16	VESA	1280x720p	74.25	60.00	45.15	-/-	VGA	
17	VESA	1920x1080i	74.25	60.00	33.78	-/-	VGA	

Video Supported Mode

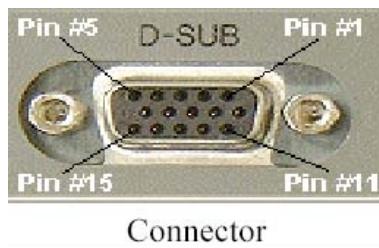
TV System	NTSC (3.58/4.43) / PAL (B/G,D/K,I) / SECAM (D/K,L)(not available for US region)
	PAL : (not available for US region) A2 and NICAM Teletext
	NTSC : BTSC support (USA only) EIAJ support (Japan only) SAP/MTS V-Chip Close Captioning
Video	480i SDTV support Picture in Picture (Video on Graphic) De-interlace support 2D noise reduction filter

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2. Interface

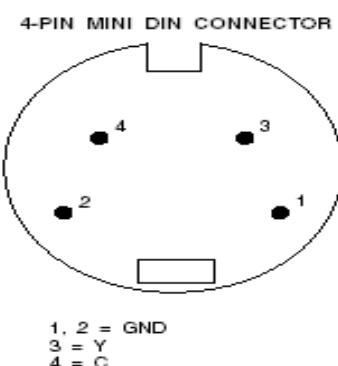
2.1 VGA Interface



Pin	Function	Signal Level	Impedance
1	Red	0.7V	75 Ohms
2	Green	0.7V	75 Ohms
3	Blue	0.7V	75 Ohms
4	Reserved		
5	Ground		
6	Red Ground		
7	Green Ground		
8	Blue Ground		
9	+5V DC		
10	Sync. Ground		
11	Reserved		
12	DDC SDA	TTL	
13	H-Sync.	TTL	
14	V-Sync.	TTL	
15	DDC SCL	TTL	

VGA 15-Pin D-SUB Female Connector

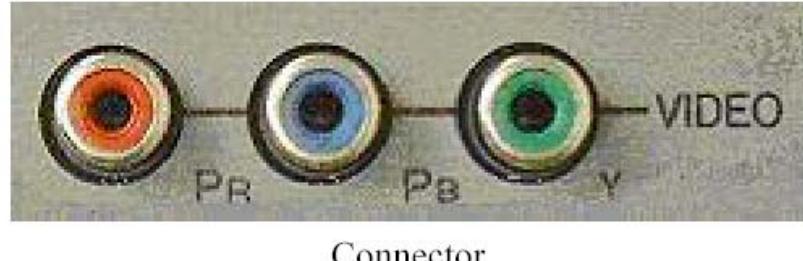
2.2 S-Video Interface



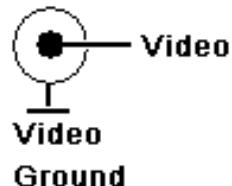
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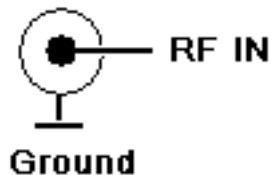
2.3 YPbPr



2.4 Composite Interface



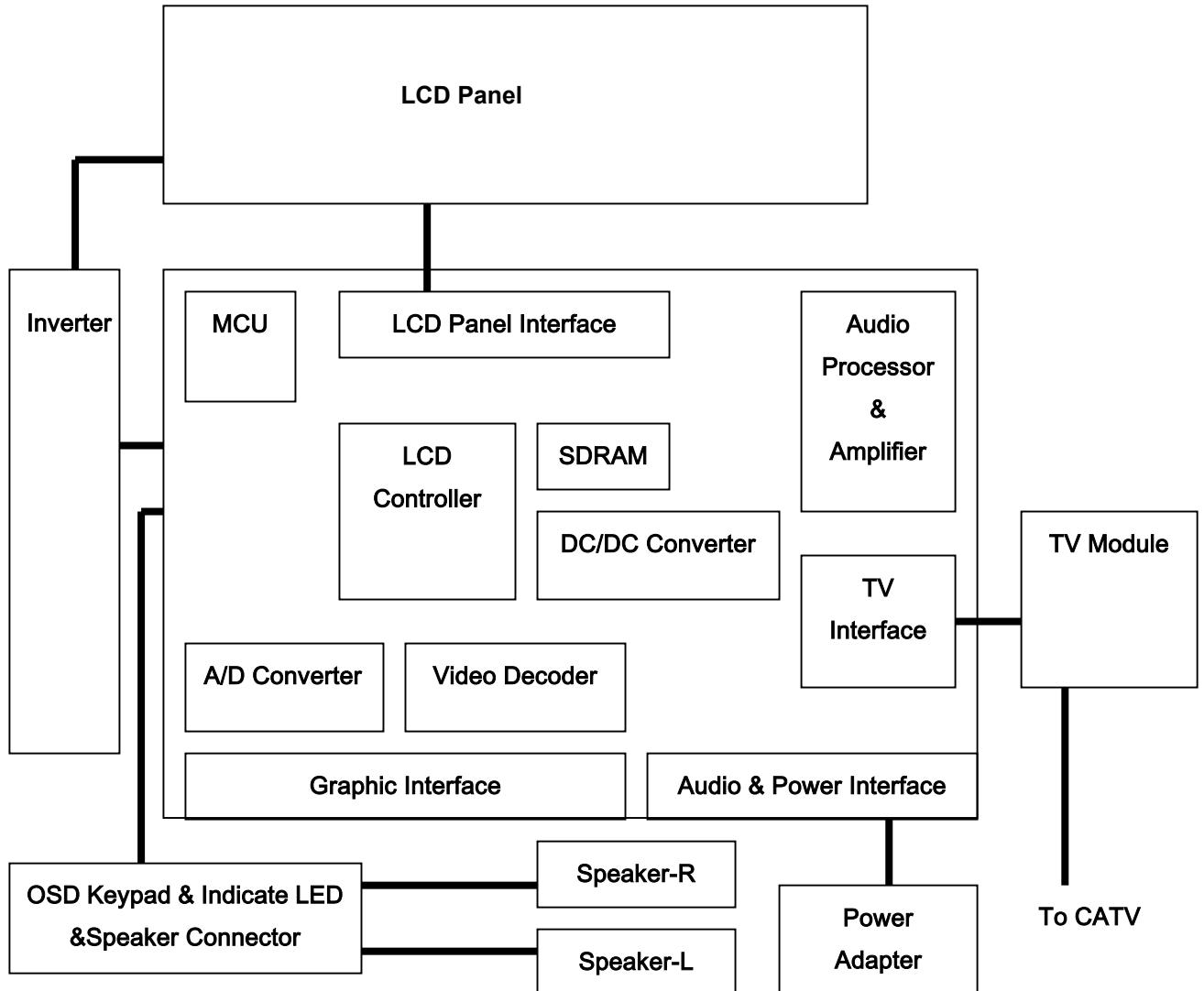
2.5 TV RF Interface



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3. System Block Diagram



4. Description of Level 1 Service Tools

- Multimeter
- Screwdriver Plus Type
- Test Equipment :

A : Computer for Test VGA Mode

B : DVD Player for Test AV , SV , Component (YPbPr) Mode

C : TV Pattern Generator for Test TV Mode (e.g. Fluke 54200)

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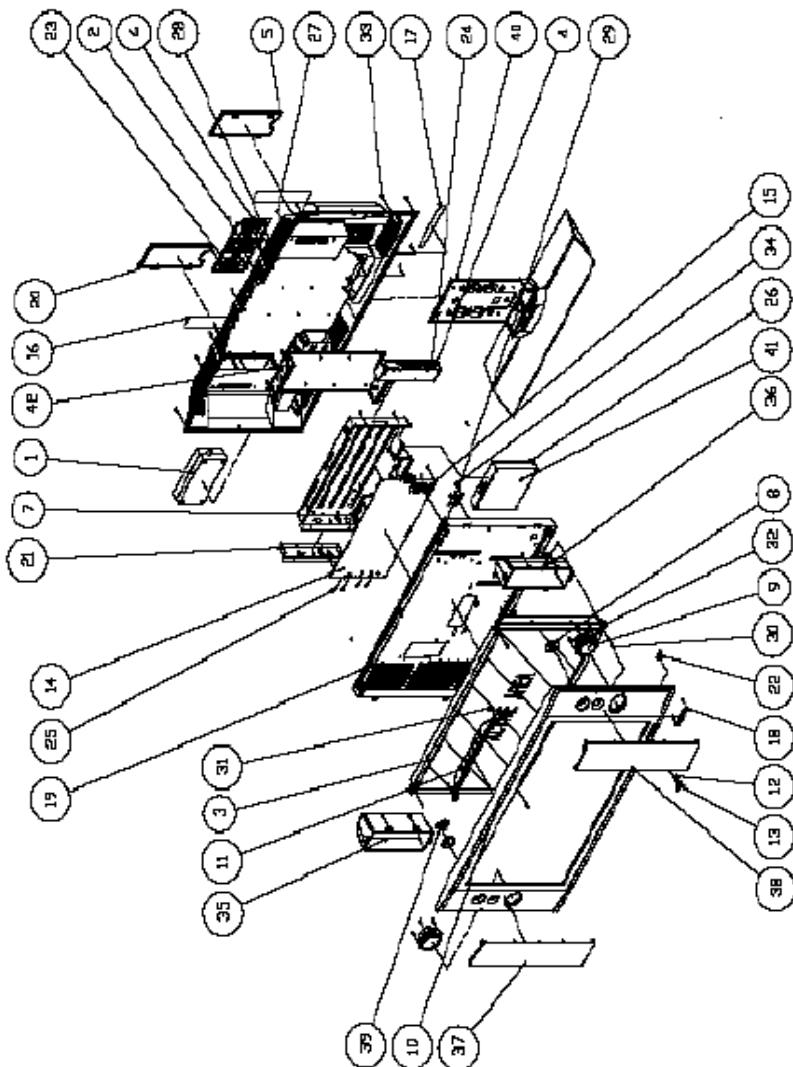
5. Defect mode, Possible causes and Solution for End-Users

Defect Mode	Possible causes	Solution
1.No picture	1.Did you connect power supply core? 2.Did you turn on the power? 3.Is the signal line connected correctly? 4.Is the screen in power saving mode?	1.Is the screen in power saving mode? 2.Turn on power supply. 3.Connect the signal line correctly. 4.Press any key of computer.
2.Abnormal colors	1.Is the signal line connected correctly?	1.Connect the signal line correctly.
3.Expanded picture	1.Is the signal line connected correctly? 2.Is the input signal outside the mandatory frequency range?	1.Connect the signal line correctly. 2.Enter signals in the mandatory frequency range.
4.Picture is too dark	1.Are the brightness and contrast minimum?	1.Adjust brightness and contrast.
5. Image too small or big	1. Need to adjust vertical control? 2. Need to adjust horizontal control?	1. Adjust to the wanted vertical size. 2. Adjust to the wanted Horizontal size.
6.Only sound, no picture	1.Has the direction of input source changed? 2.Is input source connected correctly?	1.Check the accuracy of the input source. 2.Check if circuits are connected correctly.
7.Only picture, no sound. Is volume adjusted to minimum?	1.Is there any problem with input source? 2.To adjust the volume in properly. 3.Is sound line not connected?	1.Check the accuracy of the input source. 2.Adjust the volume to the proper level. 3.Connect sound line correctly.
8.Cannot use remote control	1.Check if batteries are working? 2.Is there any disturbance from static and thunder??	1.Replace the batteries. 2.Turn off the power for 10 seconds; and then turn it on again.
9.No TV picture or picture is unclear	1. Cable is disconnected or connected not very well 2. Channel is not stable	1. Connect cable line correctly 2. Fine tune the channel frequency
10. Cannot receive specified channels	1. Never did Auto Scan 2. The channel was cancelled 3. The signal is too weak	3. Redo auto scan/Add the channel/Fine tune the channel frequency/Confirm the channel exists/Confirm the antenna is full channel(UHF/VHF) 4. Same as above 5. Same as above
11.No colors.	1.Is the hue/tint minimum?	1.Adjust the color setup in the Menu
12.Dotted lines or strips	1. The antenna is disturbed or is set on wrong direction 2. The signal is amplified too high. 3. The signal is too weak.	1. Adjust or move antenna. 2. Reduce the amplification rate. 3. Install the amplifier
13.Overlapped images or ghost buildings)	1.The antenna is disturbed or is set on wrong direction	1. Change input source to RF cable./ Change the antenna location.

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6. Exploded view Diagram



ITEM	NAME	QTY
1	ADAPTER	1
2	ADAPTOR COVER	1
3	ASSU APOLLO LCW-ES	1
4	AV BOX	1
5	AV COVER	1
6	BACK COVER	1
7	COVER BKT 27	1
8	EAST 4PHD6D5	2
9	EAST 5P10A0	2
10	FRONT BEZEL	1
11	FUNCTION KEY	1
12	IR FILTER	1
13	LIGHT GUIDE	1
14	MAIN B ASM	1
15	MOUNTING 375A	2
16	NAME PLATE	2
17	NAME PLATE TUER	1
18	NPOWER PCB	1
19	PANEL BRACKET	1
20	PC COVER	1
21	PC PANEL	1
22	POWER KNOB	1
23	RUBBER FOOT R1D03A	4
24	SCREW GH TD B TP 1	5
25	SCREW HFW4 32	2
26	SCREW CH M3 6	2
27	SCREW CH M4 10	4
28	SCREW PH W3 8	6
29	SCREW PH W4 8	20
30	SCREW PH W412	4
31	SCREW PH T 3 8 TP 1	9
32	SCREW PHT 4 8 TP 1	20
33	SCREW PHT 4 12 TP 1	1
34	SCREW PHW H3 6	4
35	SPEAK BOX L	1
36	SPEAK BOX R	1
37	SPEAK NET L	1
38	SPEAK NET R	1
39	SPEAK SUPPORT BKT	1
40	STAND	1
41	TUNER BOX	1
42	WAL MOUNT BKE	1

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7. Disassembly/Assembly tools and procedure for 27"

Tools



1. 27"



2. Back view



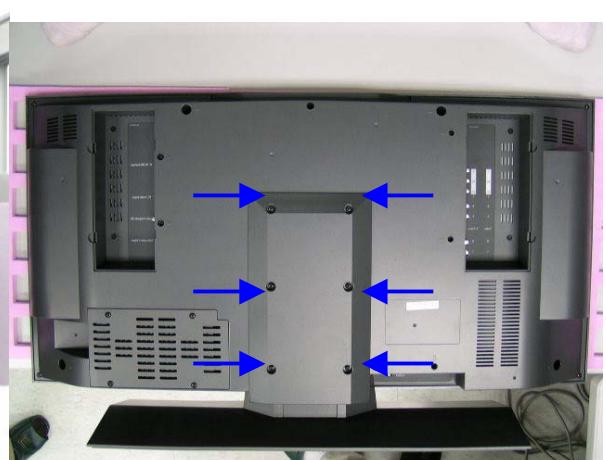
3. Lateral view



4.



5. Release 6 screws as arrow



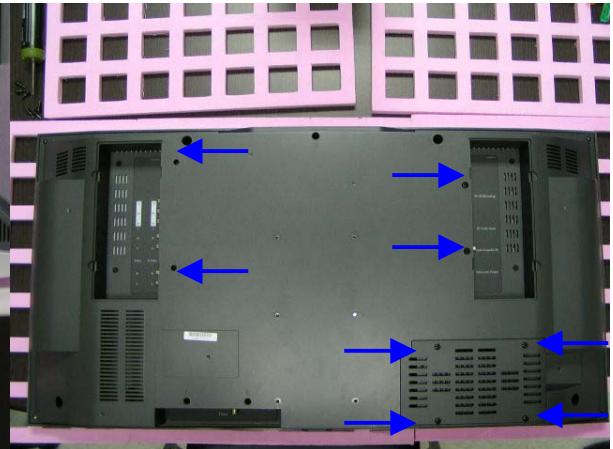
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6. Appearance of stand



7. Release 8 screws as arrows



8. Take off tuner box and AV box



9. Take off adaptor



10. AV box



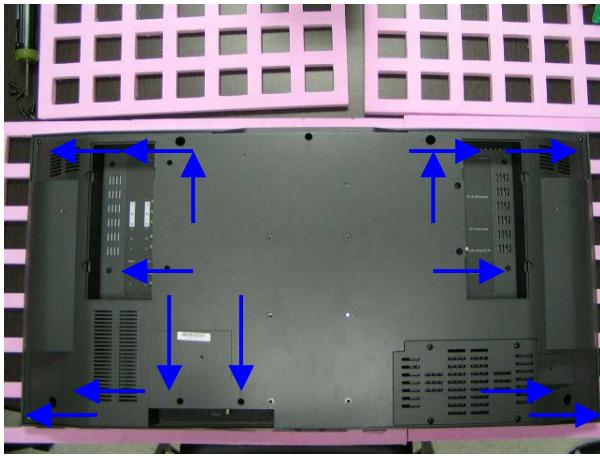
11. Tuner Box



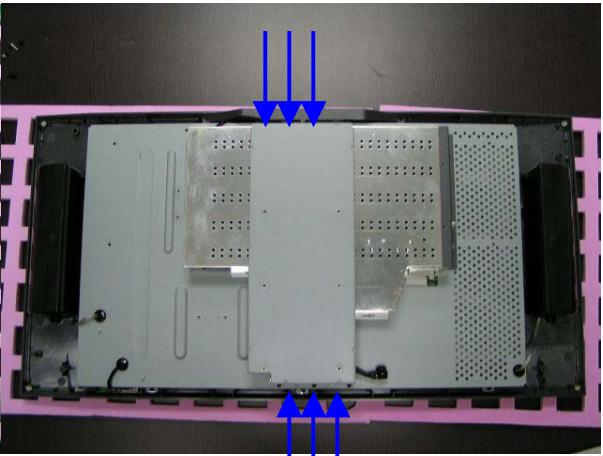
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12. Release 15 screws as arrows



13. Take off wall mount bracket



14. Wall mount bracket



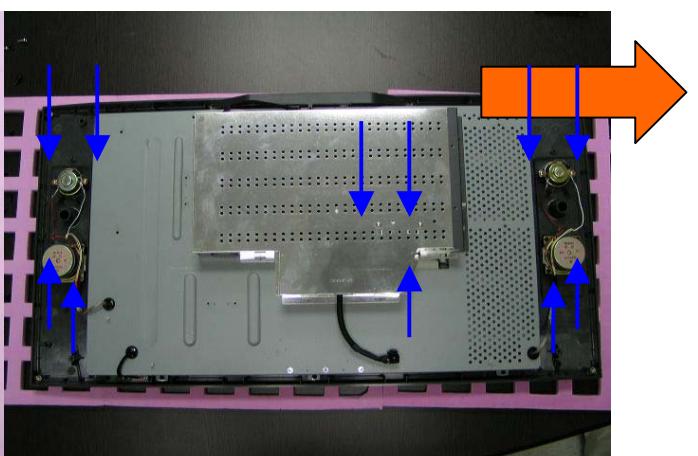
15. Loosen 8 screws on the speaker boxes.



16. Speaker boxes



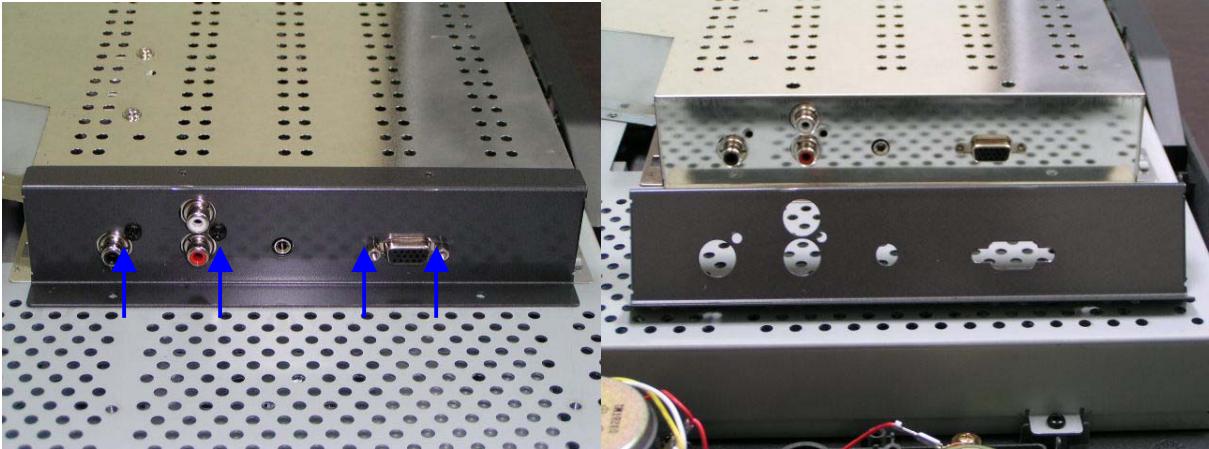
17. Loosen 3 screws and take off speaker cable.



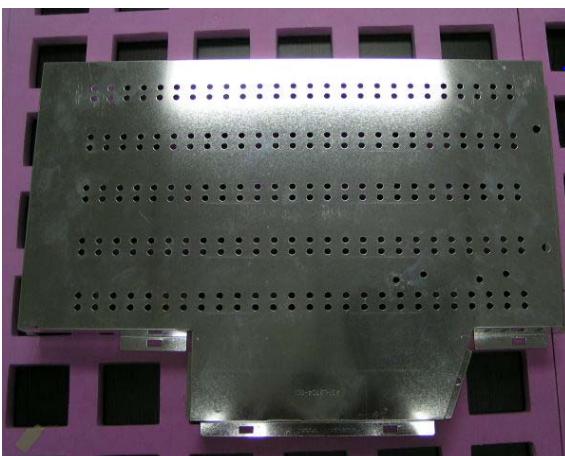
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18. Take off 4 screws and the pc panel bracket. 19. PC panel bracket.



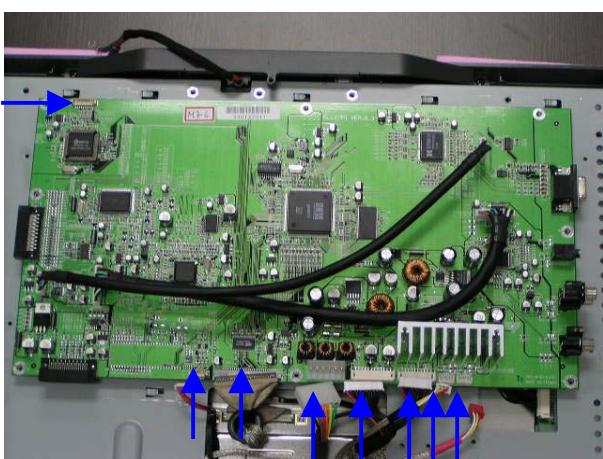
20. Take off pc panel bracket.



21. Loosen 8 screws on main board.



22. Disconnect 8 cables and take off
main board



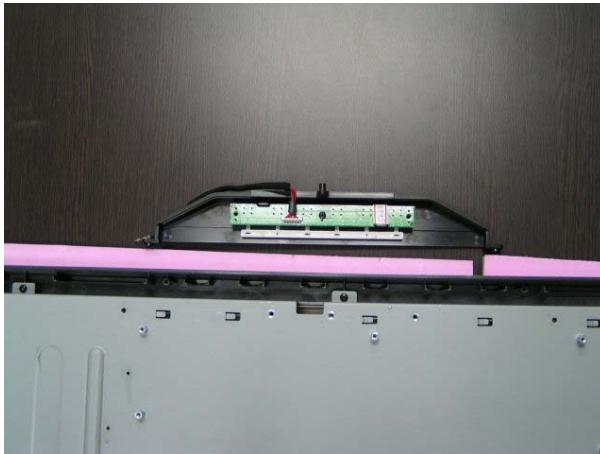
23. Loosen 2 screws on key pad
and disconnect two cable of inverter.



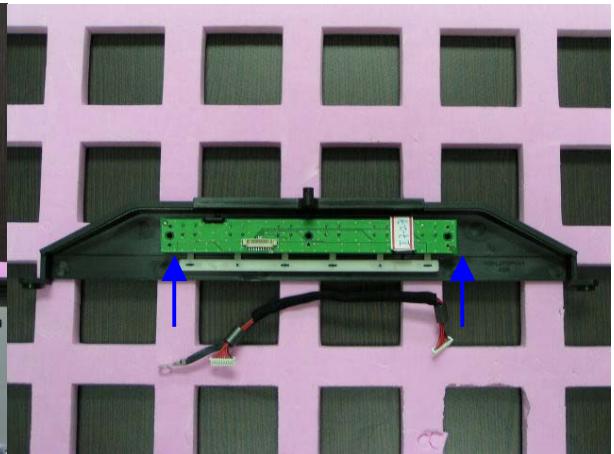
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24. Take off Key pad set.



25. Release 2 screws on key pad.



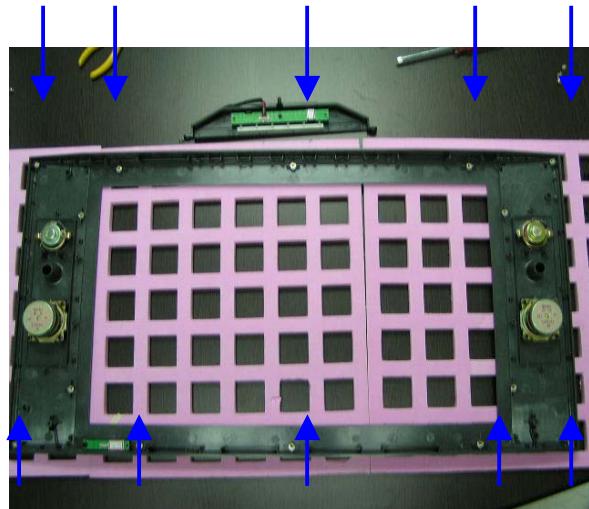
26. Key pad board.



27. Loosen 2 screws on IR board.



28. Loosen 10 screws and separate front



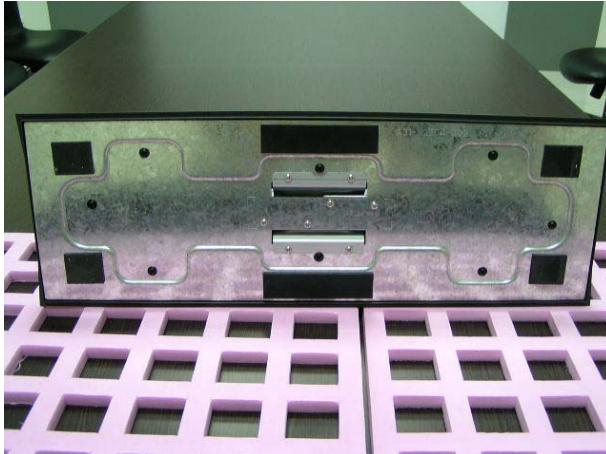
29. Hinge and stand disassembly



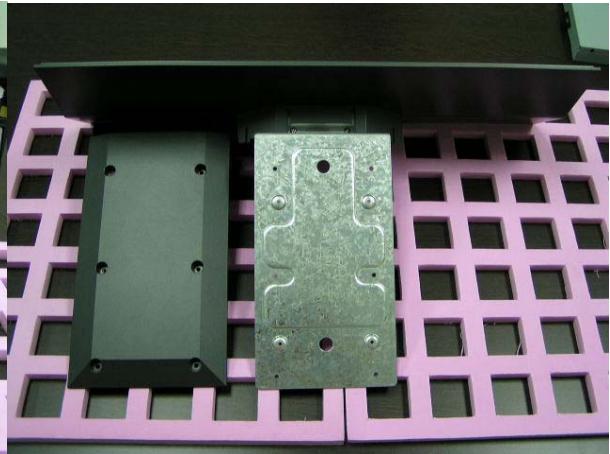
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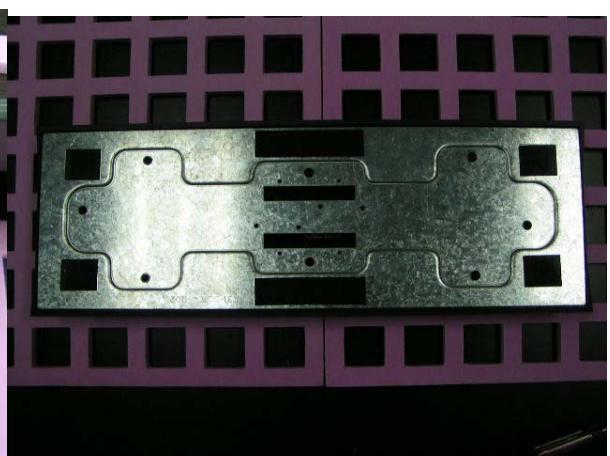
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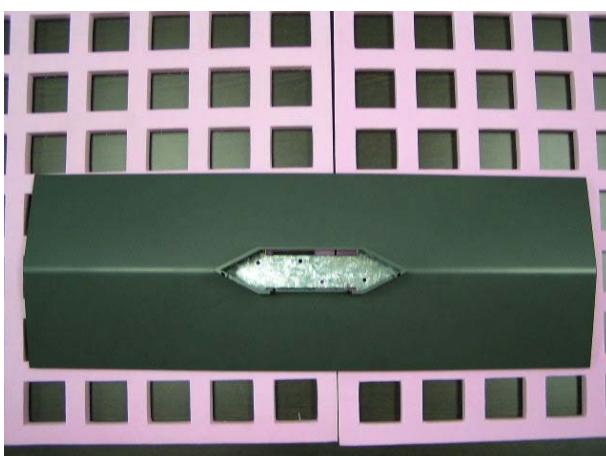
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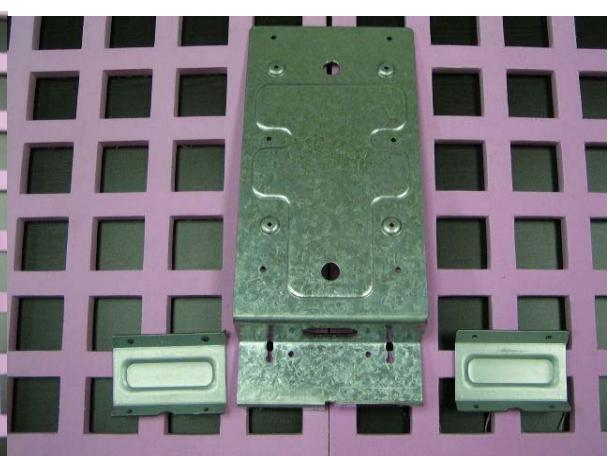
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29-5



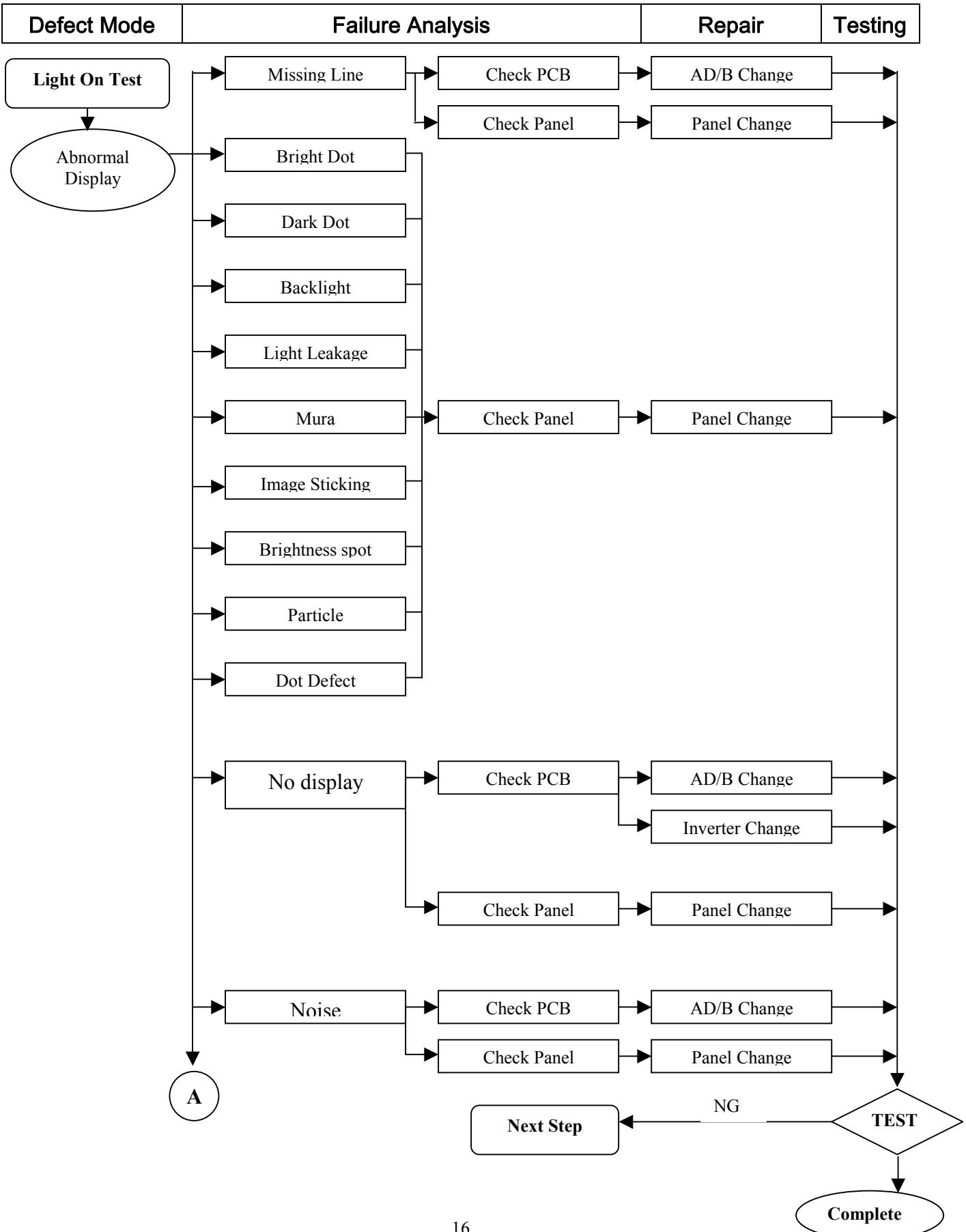
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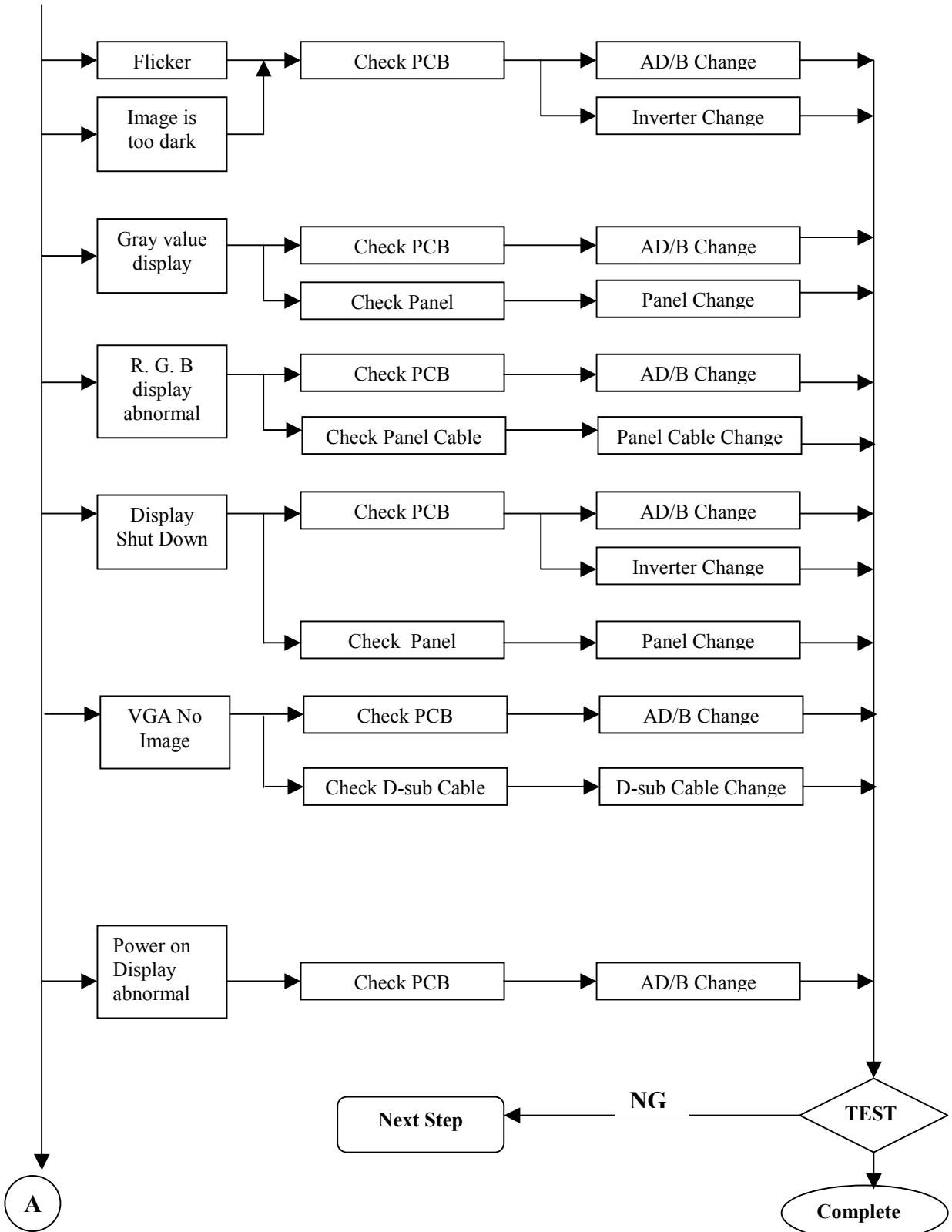
8. Troubleshooting Analysis



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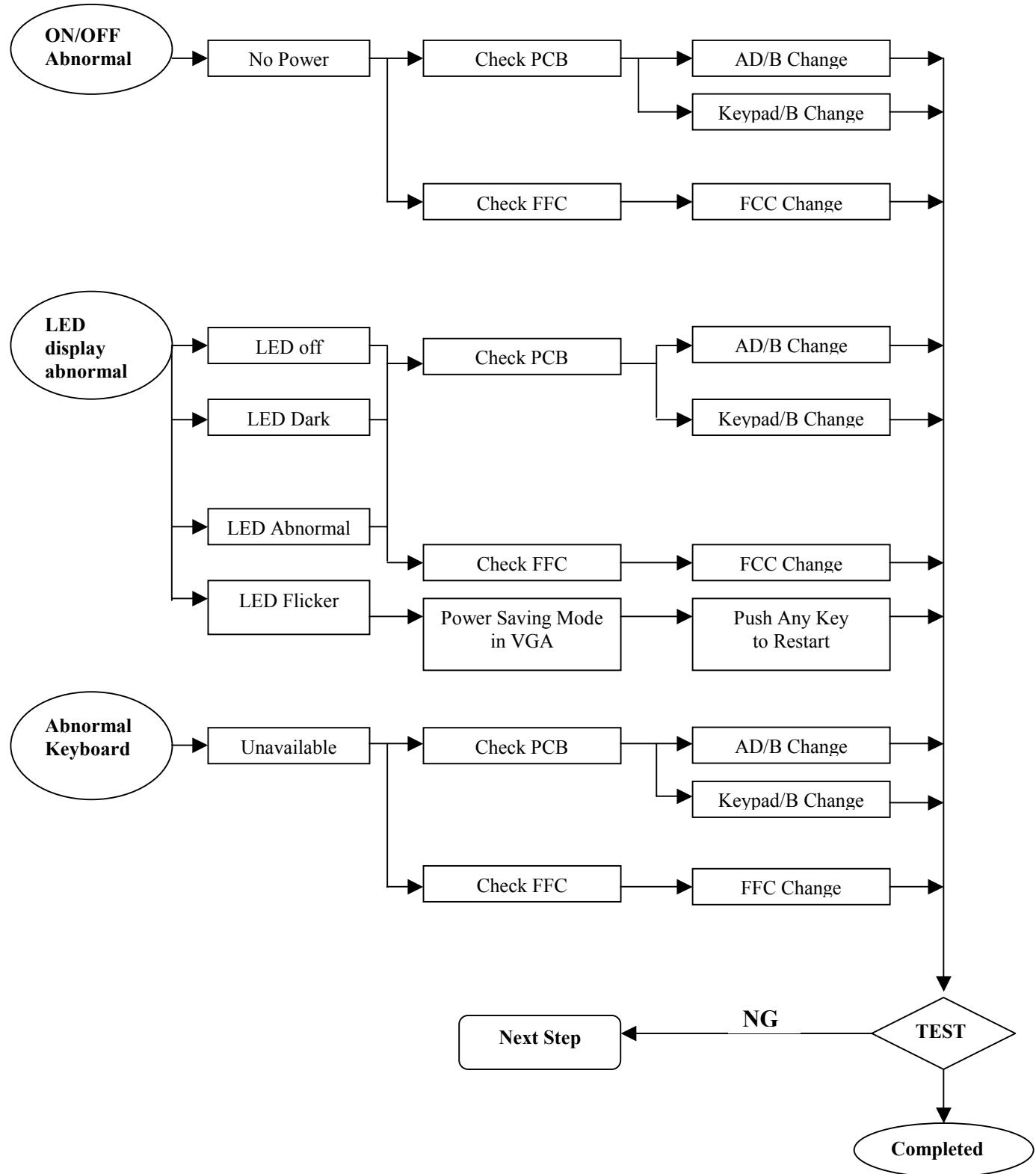
Defect Mode	Failure Analysis	Repair	Testing
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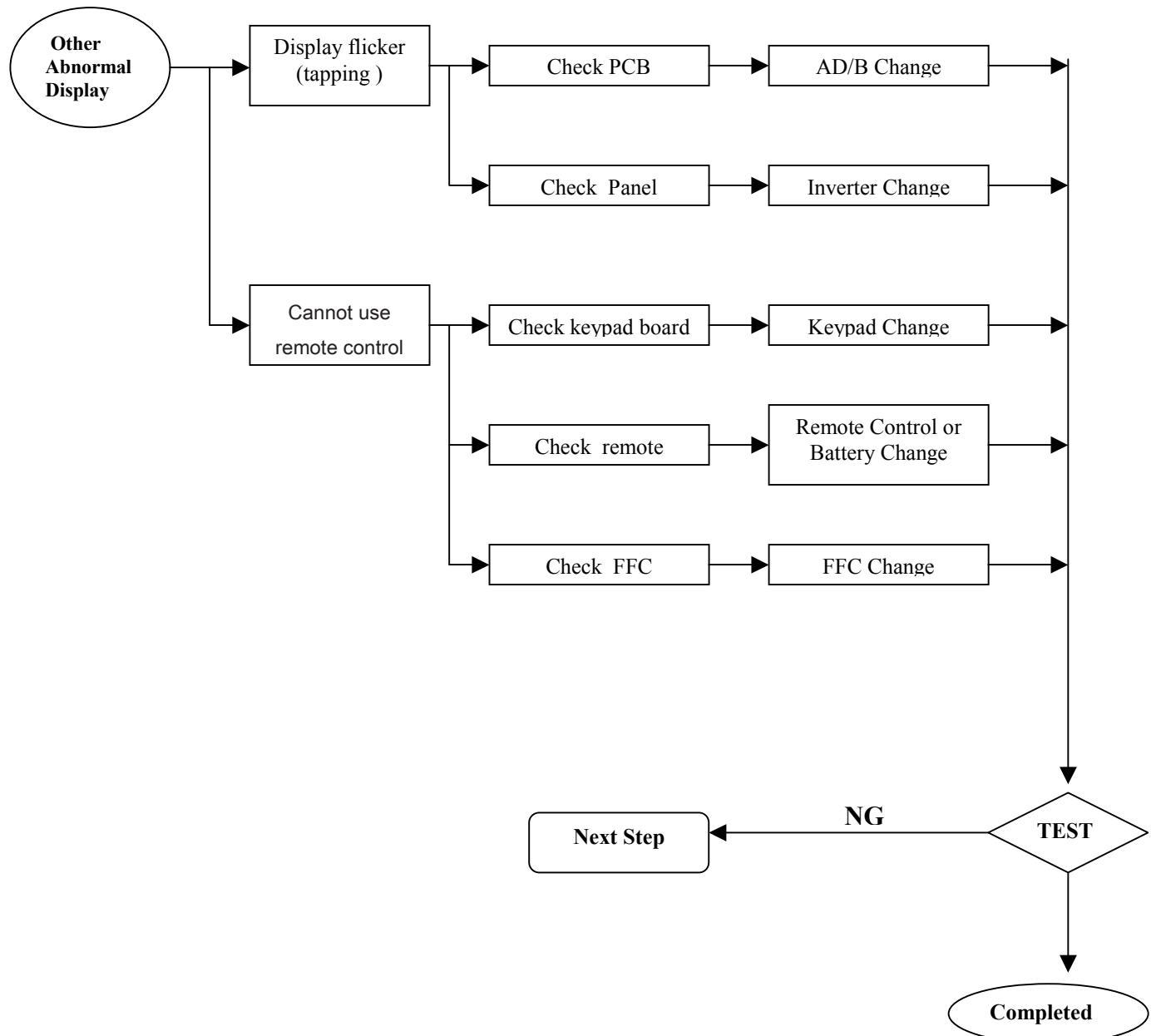
Defect Mode	Failure Analysis	Repair	Testing
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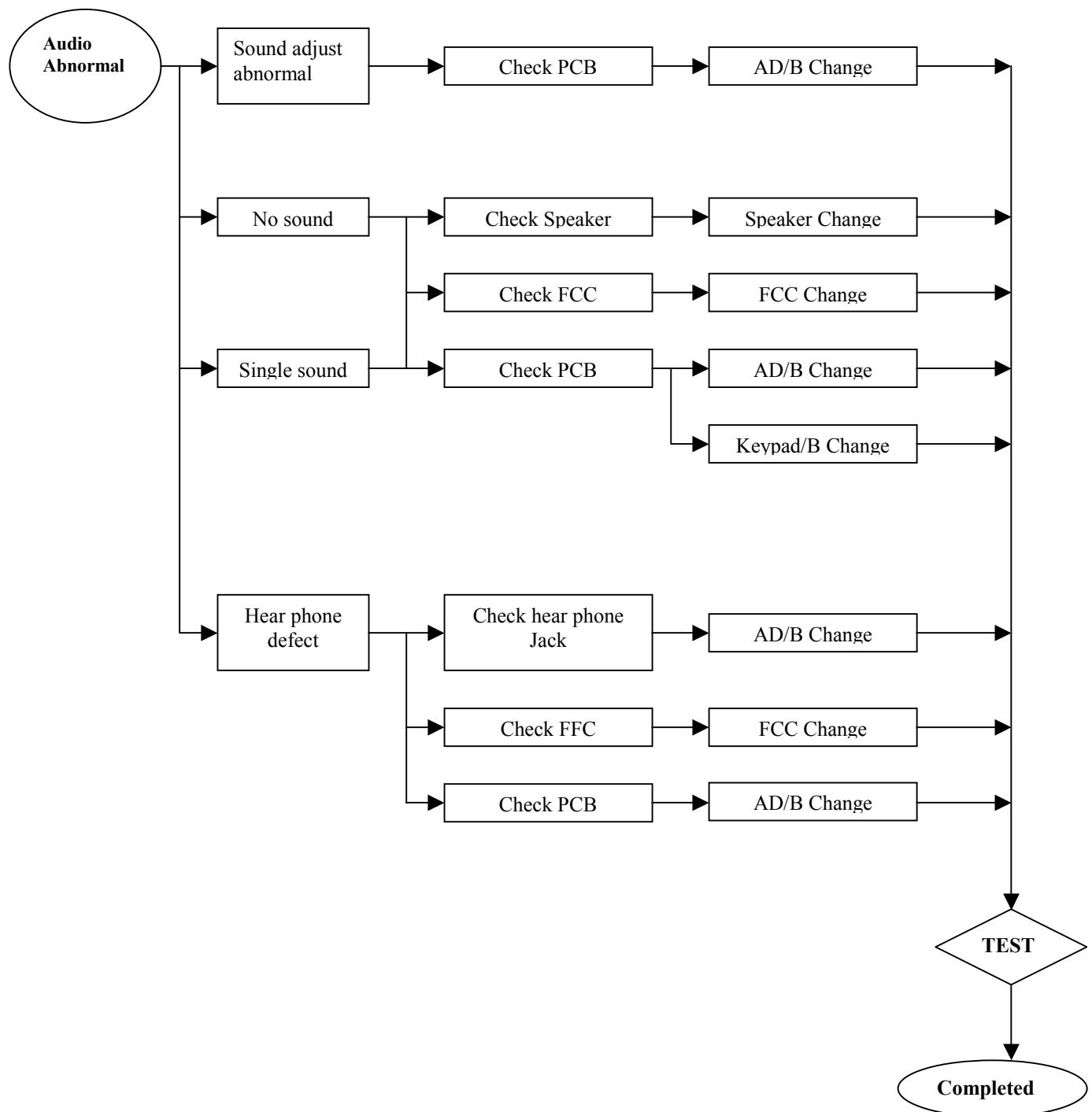
Defect Mode	Failure Analysis	Repair	Testing
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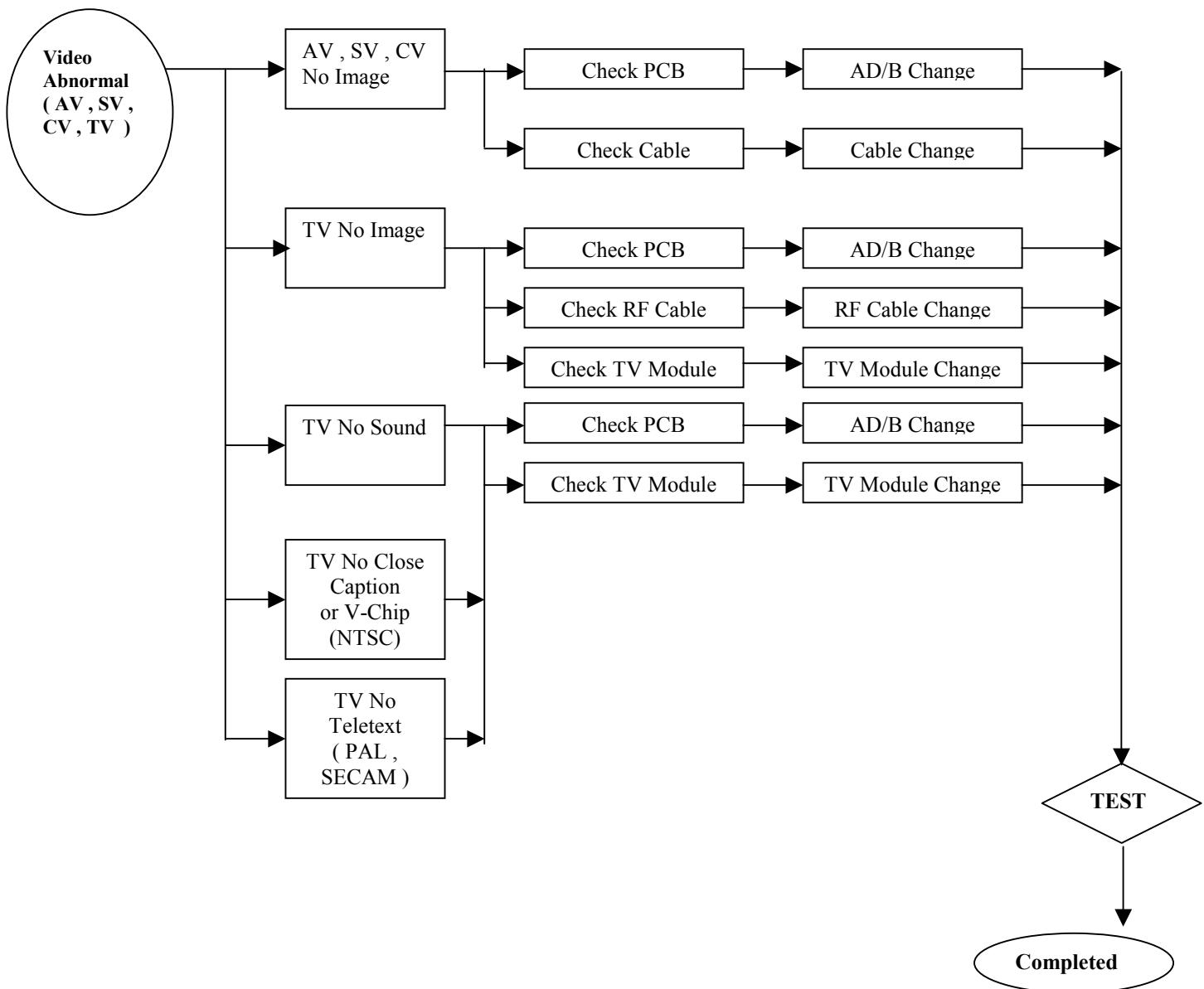
Defect Mode	Failure Analysis	Repair	Testing
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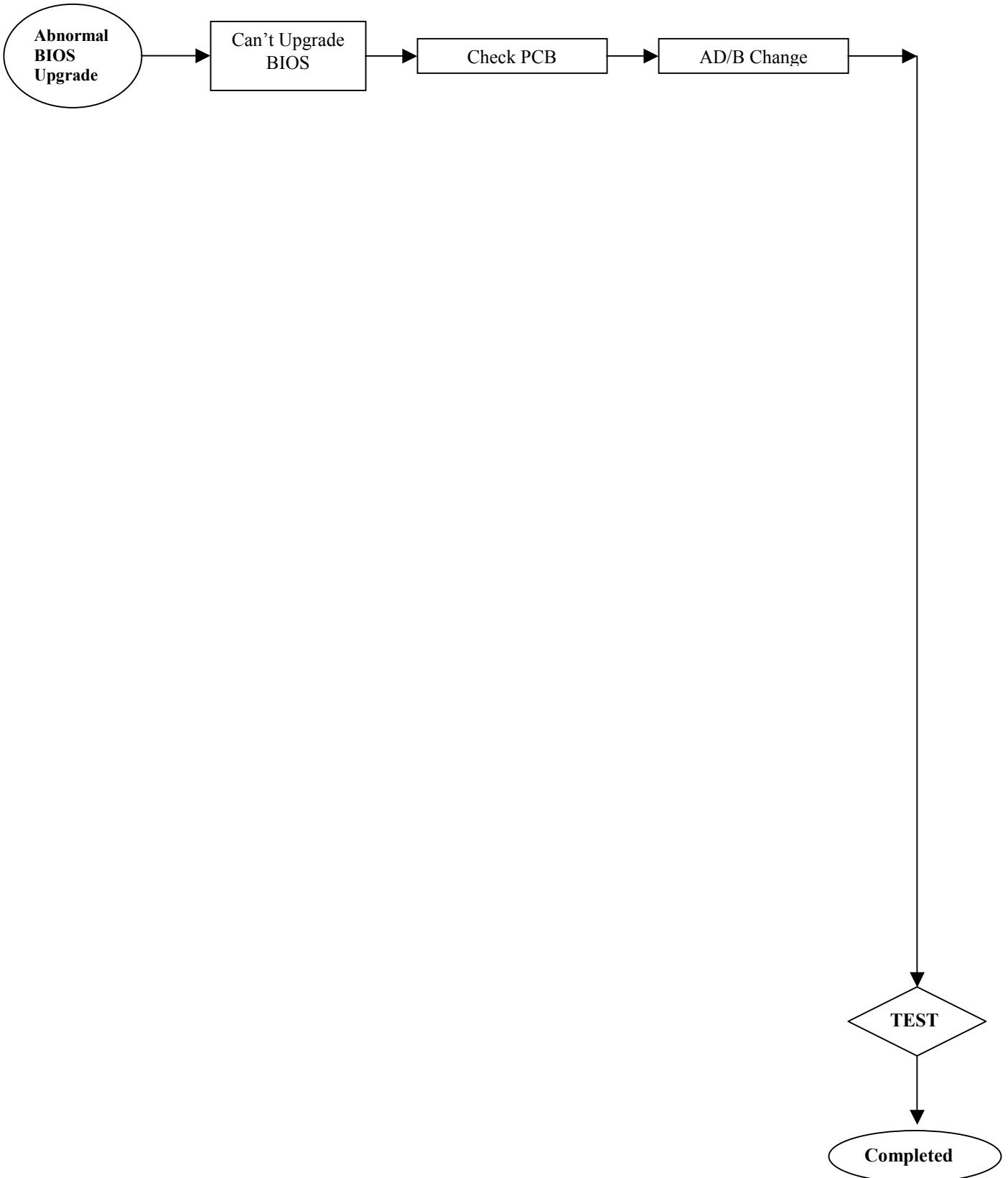
Defect Mode	Failure Analysis	Repair	Testing
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Defect Mode	Failure Analysis	Repair	Testing
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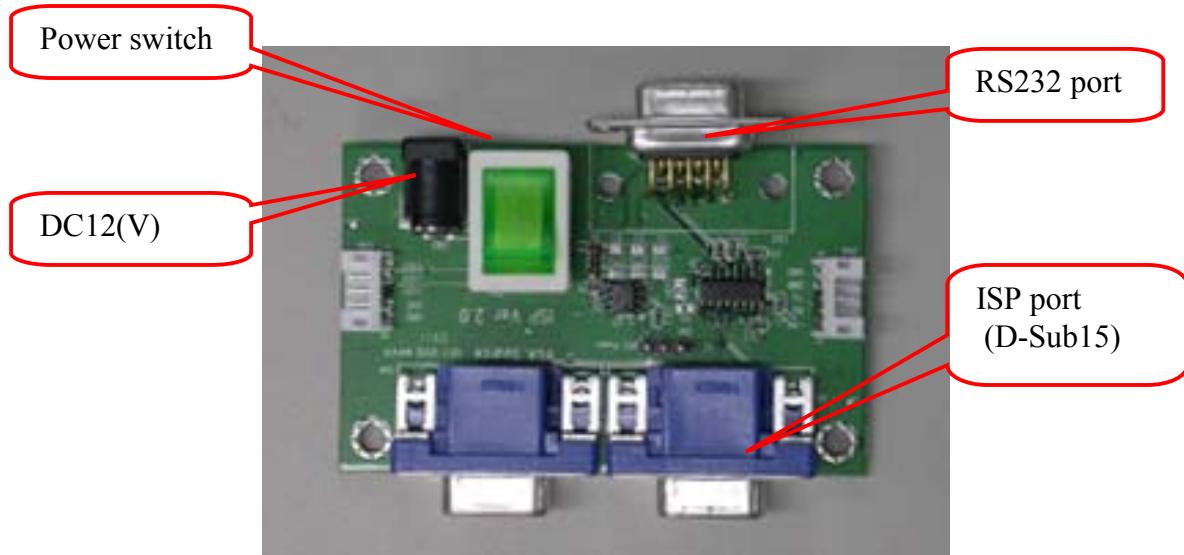
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9 . Upgrade System Bios

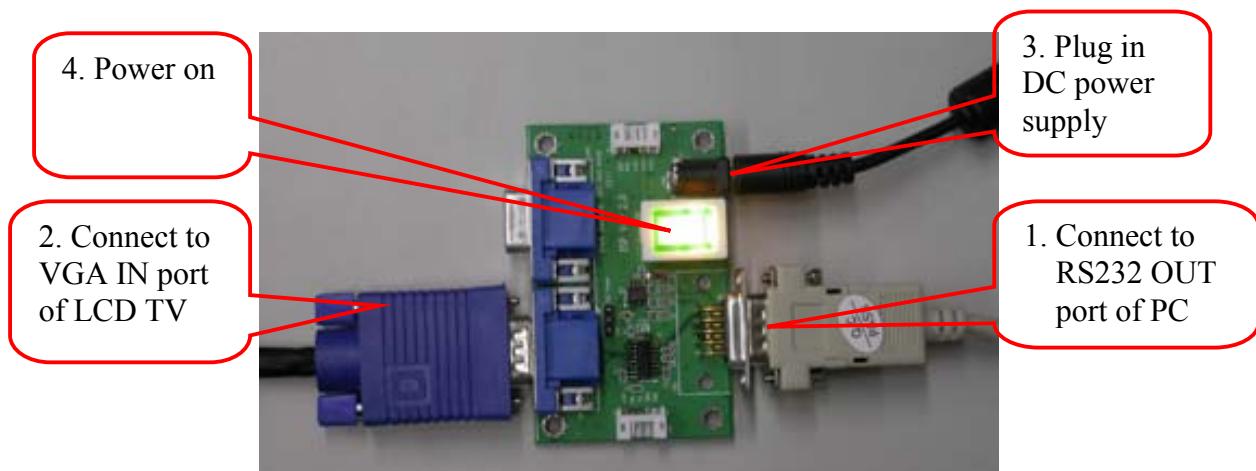
Explanation of Programmable ISP (In System Program)

Use designed ISP tool to upgrade system BIOS. To press Ch- and Ch+ on key pad simultaneously, to get into factory mode, to choose ISP item then change 0 to 1 by vol. Pad.

9.1 Preparation before upgrade



9.2 Use RS-232 signal line to connect RS 232 OUT port of PC and the RS 232 IN PORT of ISP tool. Use RGB signal line to connect VGA OUT port of ISP tool and VGA IN port of LCD TV. Power on ISP tool, shown as below.



9.3 The CPU used for processing ISP need to burn LD0415.BIN to the LDROM of CPU.
(Has burned before shipping)

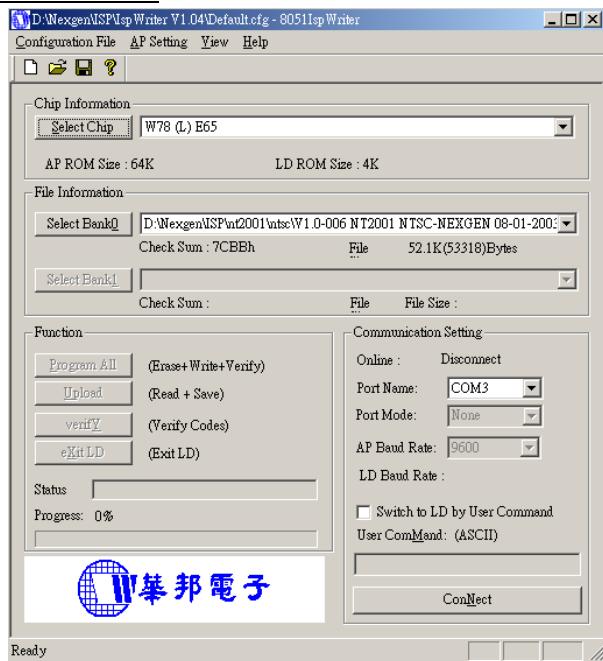
9.4 Need to enter factory mode by pushing “747+enter” button on remote control to execute ISP mode.

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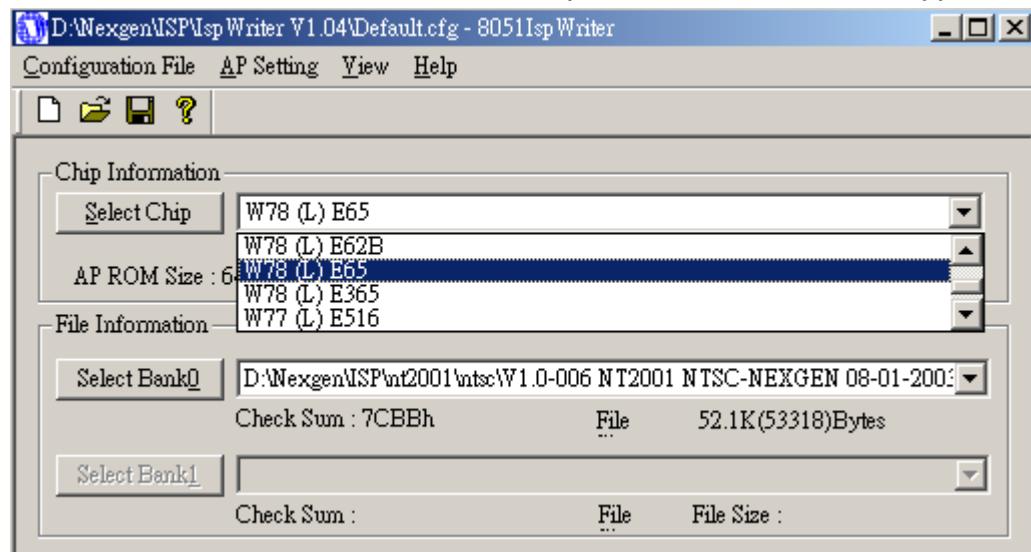
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9.5 Execute ispwriter.exe file

To execute 8051IspWriter.exe file on your PC and the screen below appears.



9.6 Move the cursor to click “Select Chip” button and select the type of CPU(W78E65).

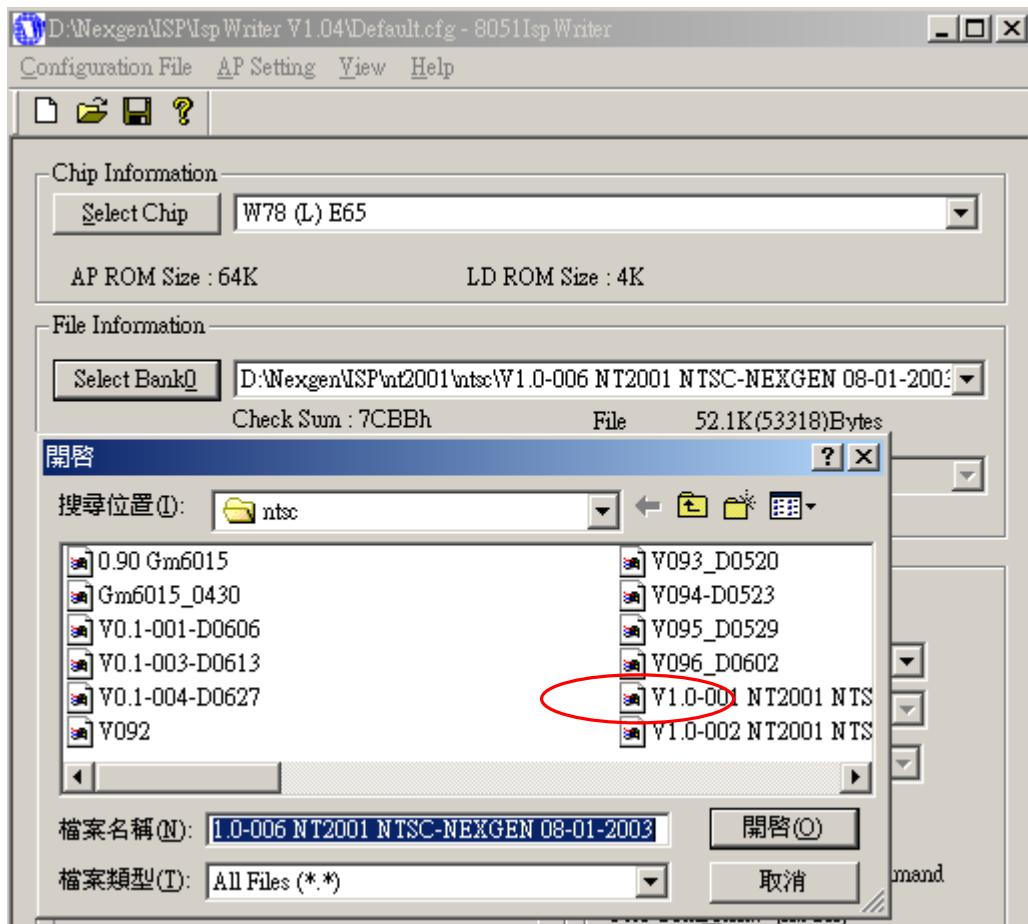


9.7 Move the cursor to click “Select Bank0” button to select the wanted burning program.

The file format is binary format instead of hex format.

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9.8 Select the Port name on Communication setting screen.



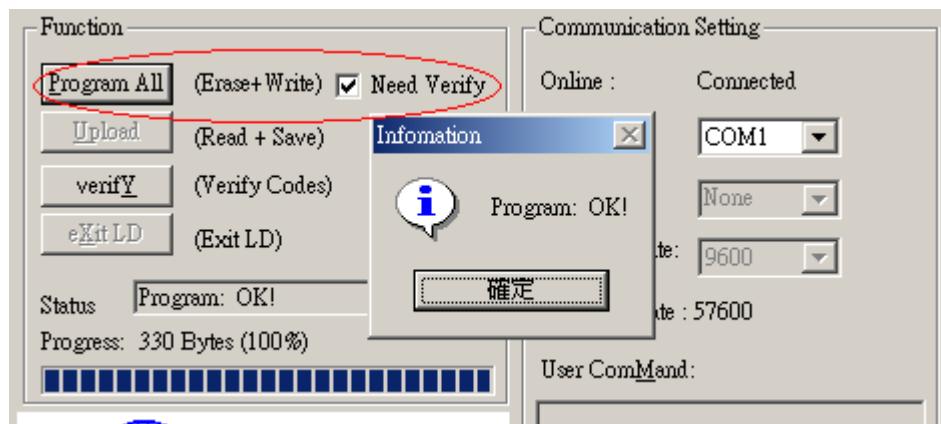
9.9 Move the cursor to click "Connect" button to link. If the linking succeeds, it will show "Connected" on Communication Setting screen.

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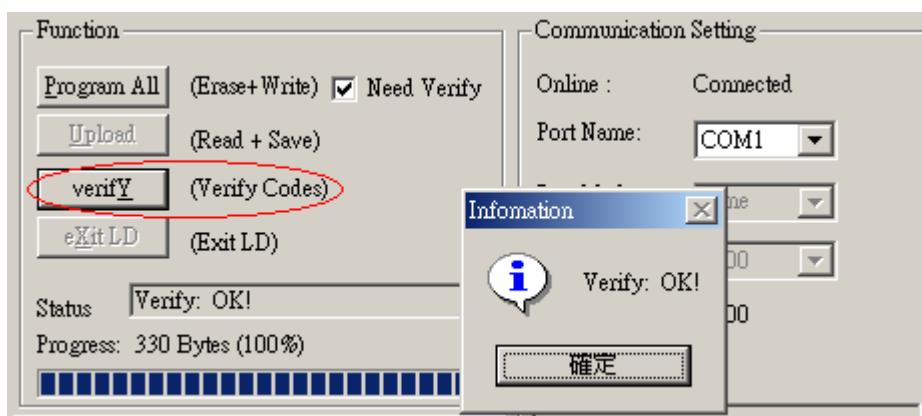
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9.10 Click “Program All” button to execute erase and write function. After execution screen below will appear. Click “confirm” button to finish the execution.



9.11 To click “verify” button to execute verify function. After verification screen below will appear. Click “confirm” button to finish the verify function.



9.12 After updating EPROM program, disconnect ISP tool. Power on LCD TV again.

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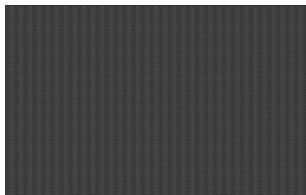
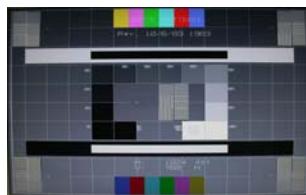
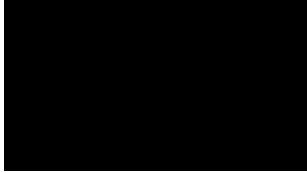
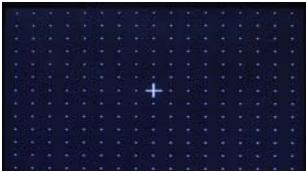
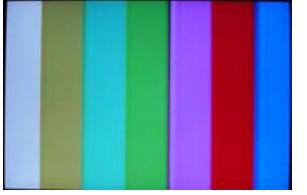
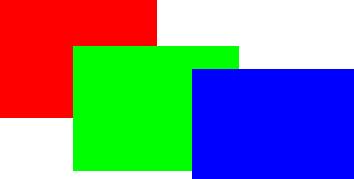
10.Defect code, Possible Cause and Changed Parts summary

Items	Defect mode	Code	Possible Cause and Changed Parts
1	No power	F1	Power cord/adaptor, power supply, Keypad board, main board
2	No picture	F2	Is on power saving mode? Each input signal is abnormal?
3	Missing line	F3	Main board, panel, panel-MB cable
4	Bright/dark dot	F4	Main board, panel, within dot spec
5	Abnormal Display	F5	Frequency of input signal is normal, main board, Tuner
6	R. G. B display abnormal	F6	Adjust Hue/Tint
7	Polarizer defect	F7	Panel surface has scratch, crack or any surface defect?
8	Picture is too dark	F8	Adjust brightness or contrast, inverter failure
9	Audio Abnormal	F9	Speaker, audio cable, Tuner
10	Audio/Video not clear	F10	Signal frequency, fine tune RF frequency, tuner
11	Only sound, no picture	F11	Signal frequency, fine tune channel frequency, tuner
12	Only picture, no sound	F12	Signal frequency, fine tune channel frequency, tuner, speaker, audio cable
13	Cannot use remote control	F13	Battery, control angle smaller than 30 degree and 5 meter away from the destination
14	Display Shut Down	F14	Power supplier, keypad board, main board
15	No picture	F15	Adjust hue/tint, main board
16	No TV picture or picture is unclear	F16	TV cable, RF signal frequency, the direction of antenna, main board
17	Flicker	F17	Input signal not stable, inverter, main board
18	TV No Teletext (PAL , SECAM)	F18	TV module, main board, firmware
19	NTSC SAP/MTS failure	F19	Tuner, main board, firmware
20	Appearance and mechanism	F20	
21	Others	F21	Please attach electronic picture and explain

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11. Test patterns and check points

1 Dot on/off	SMPTE RP133	16 Gray scale
		
*Check if Clock & Phase is distorted.	*Check if vertical line and horizontal line is clear around the center, four corners *Check brightness and contrast	*Check the amplitude of RF signal is distorted. *Check the gray scale is over saturated.
32 Gray scale	64 Gray scale	256 Gray scale
		
*Check the amplitude of RF signal is distorted *Check the gray scale is over saturated.	*Check the amplitude of RF signal is distorted *Check the gray scale is over saturated.	*Check the amplitude of RF signal is distorted *Check the gray scale is over saturated.
Black	White	1 Dot on/off
		
*Check noise, leakage, ghost *Check pixel bright/dark dot.	*Check noise, leakage, ghost image *Check pixel bright/dark dot.	*Check static convergence
Color	R, G, B	
		
*Check color quality, decoding, color transformation, chroma /hue/tint time equalization, color saturation.	*Check pixel bright/dark dot. *Check color quality	

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12.Remark (SPARE PARTS LIST)

Material	Item S/N	Item
Key parts	180-270001-101	PANEL LCD 27" WXGA 1280*720
	185-115001-101	ADAPTER 150W 12V
PCBA	196-270001-101	NLC27C1 INVERTER VER5.0
	510-271003-011	NLC27C1 MAIN BOARD PCBA VER.1
	510-272002-011	PCBA NLC27C1 IR BOARD
	510-272003-011	PCBA NLC27C1 KEY BOARD
Accessory	170-041801-101	P-CORD 250V 10A EU 3P BLK 1.8M
	171-071801-101	CAB VGA 15P BLACK 28AWG 1.8M
Internal cable	174-270302-101	WIRE W/B 27 SPK-L 3PIN L=650MM
	174-270301-101	WIRE 27" SPK-R 3PIN L=750MM
	174-270601-101	WIRE 27" IR 6PIN L=420MM
	174-270602-101	WIRE 27" POWER 6PIN L=200MM
	174-271001-101	WIRE 27" KEYPAD 10PIN L=150MM
	174-272201-101	WIRE 27" INVERTER 22PIN L=250
	174-273001-101	WIRE W/B NLC27C1 30PIN L=60MM
Packing material	401-270003-021	T27001 MAIN CARTON LUXOR
	403-270005-011	EPE CUSHING STAND NECK
	403-270007-011	NLC27C1 EPE CUSHING TOP
	403-270008-011	NLC27C1 EPE CUSHING BOTTOM
	A44-L27C9-001	NLC27C1 EPE BAG
	240-420001-011	CARTON LOCK
Mechanical parts	154-050402-101	SPK 5W 4R
	154-050802-101	SPK 5W 8R 57*55*38 FULL RANGE
	154-100004-101	SPK 5W 8R
	462-270001-011	T27001 LOGO FOR DIXONS
	200-270001-0101	NLC27C2 FRONT BEZEL
	200-270003-0101	NLC27C1 ADAPTOR COVER
	200-270004-0101	NLC27C1 AV COVER
	200-270005-0101	NLC27C1 PC COVER
	200-270006-0101	NLC27C1 BACK COVER
	200-270007-0101	NLC27C1 STAND BASE COVER
	200-270009-0101	NLC27C1 STAND FRAME COVER
	200-270010-0101	NLC27C1 LIGHT GUIDE
	200-270011-0101	NLC27C1 POWER BUTTON
	200-270012-0101	NLC27C1 FUNCTION KEY
	200-270013-0101	NLC27C1 IR FILTER

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	200-270014-0101	NLC27C1 SPEAK BOX
	200-270015-0101	NLC27C1 FUNCTION PANEL
	200-270017-0101	NLC27C1 STAND FRAME PLATE
	210-270007-011	NLC27C1 PC NAME PLATE
	250-270007-011	NLC27C1 MAIN COVER BRACKET
	250-270008-011	NLC27C1 PANEL BRACKET
	250-270009-011	NLC27C1 PC PANEL BRACKET
	250-270010-011	NLC27C1 SPEAKER NET
	250-270011-011	NLC27C1 STAND BASE BRACKET
	250-270012-011	NLC27C1 STAND FRAME BRACKET
	250-270016-011	NLC27C1 WALL MOUNT BRACKET
Screw	600-030004-010	SCREW M4*12 PAN HEAD
	600-030008-041	SCREW M3*8 PAN HEAD
	600-040008-040	SCREW M4*8 PAN HEAD
	600-440012-110	SCREW M4*12MM PAN HEAD
	600-740008-040	SCREW T4*8 PAN HEAD TP-P
	600-740012-040	SCREW T4*12 P-HEAD
	601-730008-040	SCREW T3*8 TP-P BINDING HEAD
	602-030006-010	SCREW M3*6 PAN/WAS-HEAD
	602-730008-010	SCREW T3*8 PHW TP-P
	602-740008-010	SCREW T4*8 PHW TP-P
	603-040008-040	SCREW M4*8 I-HEAD
	605-140007-010	SCREW HEX 4#-40*7
	608-730010-030	SCREW T3*10 TP-P PH+W(10)
	609-020005-030	SCREW M2*5 PH+SW+W
	609-140015-040	SCREW M4*15 PH+SW+W